AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (currently amended): A ~~An isolated~~ porcine adenovirus sequence essential for encapsidation, wherein said sequence consists of [[a]] the nucleotide sequence between nt 212 and 531 (SEQ ID NO:414) of porcine adenovirus type 3, ~~and~~ wherein said nucleotide sequence comprises the sequence ~~one or more sequences selected from the group consisting of AAATT; ATTTT; TATT;~~ TATTTTTT~~; TATATA; TTTT; TATTTT; ATATT; TTTA; AATTTTA; ATTTTT; and TATTTATT~~ and wherein the nucleotide sequence is capable of encapsidating an adenovirus genome.

Claim 2 (currently amended): [[The]] A porcine adenovirus sequence essential for encapsidation ~~of claim 1~~ wherein said nucleotide sequence comprises ~~a nucleotide sequence selected from the group consisting of:~~

~~Motif I represented by X_IAAATTY$_I$, wherein X_I is selected from the group consisting of G, GG, CGG, GCGG, and GGCGG, and wherein Y_I is selected from the group consisting of CCCGCACA, CCCGCAC, CCCGCA, CCCGC, CCCG, CCC, CC and C (SEQ ID NOS: 1, 2, 91, 103-139);~~

~~Motif II represented by X_{II}ATTTTY$_{II}$, wherein X_{II} is selected from the group consisting of G, GG, GGG, CGGG, and GCGGG, and wherein Y_{II} is selected from the group consisting of GTGCCCTCT, GTGCCCTC, GTGCCCT, GTGCCC, GTGCC, GTGC, GTG, GT and G (SEQ ID NOS: 3, 4, 95, 140-181);~~

~~Motif III represented by X_{III}TATTY$_{III}$, wherein X_{III} is selected from the group consisting of G, GG, CGG, CCGG, and CCCGG, and wherein Y_{III} is selected from the group consisting of CCCCACCTG, CCCCACCT, CCCCACC, CCCCAC, CCCCA, CCCC, CCC, CC, and C (SEQ ID NOS: 5, 6, 97, 182-223);~~

Motif IV represented by X_{IV}TATTTTTTY$_{IV}$, wherein X_{IV} is selected from the group consisting of G, TG, GTG, GGTG, and GGGTG, and wherein Y_{IV} is selected from the group

consisting of CCCCTCA, CCCCTC, CCCCT, CCCC, CCC, CC, and C (SEQ ID NOS: 7, 8, 100, 224-255);

~~Motif V represented by X_VTATATAY_V, wherein X_V is selected from the group consisting of G, TG, GTG, AGTG, and CAGTG, and wherein Y_V is selected from the group consisting of GTCCGCGC, GTCCGCG, GTCCGC, GTCCG, GTCC, GTC, GT and G (SEQ ID NOS: 9, 10, 101, 256-292); and~~

~~Motif VI represented by X_{VI}TTTTY$_{VI}$, wherein X_{VI} is selected from the group consisting of G, AG, GAG, AGAG, and TAGAG, wherein Y_{VI} is selected from the group consisting of CTCTCAGCG, CTCTCAGC, CTCTCAG, CTCTCA, CTCTC, CTCT, CTC, CT and C (SEQ ID NOS: 11, 12, 99, 102, 293-333).~~

Claim 3 (withdrawn): The porcine adenovirus sequence essential for encapsidation of claim 1 wherein said sequence comprises a nucleotide sequence selected from the group consisting of:

Motif 1 represented by X_1TATTTTY$_1$, wherein X_1 is selected from the group consisting of G, GG, TGG, and CTGG, and wherein Y_1 is selected from the group consisting of C, CC, CCA, and CCAC (SEQ ID NOS: 13, 334-348);

Motif 2 represented by X_2ATATTY$_2$, wherein X_2 is selected from the group consisting of G, TG, and GTG, and wherein Y_2 is selected from the group consisting of G and GG (SEQ ID NOS: 14, 349-353);

Motif 3 represented by X_3TTTAY$_3$, wherein X_3 is selected from the group consisting of C and CC, and wherein Y_3 is selected from the group consisting of C, CC, CCT, CCTG, CCTGG, and CCTGGG (SEQ ID NOS: 15, 354-364);

Motif 4 represented by X_4AATTTTAY$_4$, wherein X_4 is selected from the group consisting of C, TC, and CTC, and wherein Y_4 is selected from the group consisting of C, CC, CCA, and CCAC (SEQ ID NOS: 16, 365-375);

Motif 5 represented by X_5ATTTTTY$_5$, wherein X_5 is selected from the group consisting of G, CG, TCG, GTCG, and GGTCG, and wherein Y_5 is selected from the group consisting of C, CC, CCA, and CCAC (SEQ ID NOS: 17, 376-394); and

Motif 6 represented by X_6TATTTATTY$_6$, wherein X_6 is selected from the group consisting of C, CC, and CCC, and wherein Y_6 is selected from the group consisting of C, CT, CTG, CTGC, CTGCG, CTGCGC, and CTGCGCG (SEQ ID NOS: 18, 20, 395-413).

Claim 4 (canceled)

Claim 5 (withdrawn): The porcine adenovirus sequence essential for encapsidation of claim 1 wherein said sequence is a porcine adenovirus 5 sequence.

Claim 6 (currently amended): The porcine adenovirus sequence essential for encapsidation of claim 1 wherein said sequence comprises a nucleotide sequence selected from the group consisting of:

~~CGGAAATTCCCGCACA (SEQ ID NO: 1);~~
~~GGCGGAAATTCCCGCACA (SEQ ID NO: 2);~~
~~GGGATTTTGTGCCCTCT (SEQ ID NO: 3);~~
~~GCGGGATTTTGTGCCCTCT (SEQ ID NO: 4);~~
~~CGGTATTCCCCACCTG (SEQ ID NO: 5);~~
~~CCCGGTATTCCCCACCTG (SEQ ID NO: 6);~~
GTGTATTTTTTCCCCTCA (SEQ ID NO: 7); and
GGGTGTATTTTTTCCCCTCA (SEQ ID NO: 8)~~;~~
~~GTGTATATAGTCCGCGC (SEQ ID NO: 9);~~
~~CAGTGTATATAGTCCGCGC (SEQ ID NO: 10);~~
~~GAGTTTTCTCTCAGCG (SEQ ID NO: 11); and~~
~~TAGAGTTTTCTCTCAGCG (SEQ ID NO: 12)~~.

Claim 7 (withdrawn): The porcine adenovirus sequence essential for encapsidation of claim 1 wherein said sequence comprises a nucleotide sequence selected from the group consisting of:

CTGGTATTTTCCAC (SEQ ID NO: 13);
GTGATATTGG (SEQ ID NO: 14);

CCTTTACCTGGG (SEQ ID NO: 15);
CTCAATTTTACCAC (SEQ ID NO: 16);
GGTCGATTTTTCCAC (SEQ ID NO: 17); and
CCCTATTTATTCTGCGCG (SEQ ID NO: 18).

Claim 8 (currently amended): A recombinant adenovirus vector comprising a ~~an isolated~~ porcine adenovirus sequence essential for encapsidation, wherein said sequence consists of [[a]] the nucleotide sequence between nt 212 and 531 (SEQ ID NO:414) of porcine adenovirus type 3, ~~and~~ wherein said nucleotide sequence comprises the sequence ~~one or more sequences selected from the group consisting of AAATT; ATTTT; TATT;~~ TATTTTTT; ~~TATATA; TTTT; TATTTT; ATATT; TTTA; AATTTTA; ATTTTT; and TATTTATT~~ and wherein the nucleotide sequence is capable of encapsidating an adenovirus genome.

Claim 9 (currently amended): The recombinant adenovirus vector of claim 8 wherein said porcine adenovirus sequence essential for encapsidation comprises a nucleotide sequence ~~selected from the group consisting of:~~

~~Motif I represented by X_IAAATTY$_I$, wherein X_I is selected from the group consisting of G, GG, CGG, GCGG, and GGCGG, and wherein Y_I is selected from the group consisting of CCCGCACA, CCCGCAC, CCCGCA, CCCGC, CCCG, CCC, CC and C (SEQ ID NOS: 1, 2, 91, 103-139);~~

~~Motif II represented by X_{II}ATTTTY$_{II}$, wherein X_{II} is selected from the group consisting of G, GG, GGG, CGGG, and GCGGG, and wherein Y_{II} is selected from the group consisting of GTGCCCTCT, GTGCCCTC, GTGCCCT, GTGCCC, GTGCC, GTGC, GTG, GT and G (SEQ ID NOS: 3, 4, 95, 140-181);~~

~~Motif III represented by X_{III}TATTY$_{III}$, wherein X_{III} is selected from the group consisting of G, GG, CGG, CCGG, and CCCGG, and wherein Y_{III} is selected from the group consisting of CCCCACCTG, CCCCACCT, CCCCACC, CCCCAC, CCCCA, CCCC, CCC, CC, and C (SEQ ID NOS: 5, 6, 97, 182-223);~~

Motif IV represented by X_{IV}TATTTTTTY_{IV}, wherein X_{IV} is selected from the group consisting of G, TG, GTG, GGTG, and GGGTG, and wherein Y_{IV} is selected from the group consisting of CCCCTCA, CCCCTC, CCCCT, CCCC, CCC, CC, and C (SEQ ID NOS: 7, 8, 100, 224-255);

~~Motif V represented by X_VTATATAY_V, wherein X_V is selected from the group consisting of G, TG, GTG, AGTG, and CAGTG, and wherein Y_V is selected from the group consisting of GTCCGCGC, GTCCGCG, GTCCGC, GTCCG, GTCC, GTC, GT and G (SEQ ID NOS: 9, 10, 101, 256-292); and~~

~~Motif VI represented by X_{VI}TTTTY$_{VI}$, wherein X_{VI} is selected from the group consisting of G, AG, GAG, AGAG, and TAGAG, wherein Y_{VI} is selected from the group consisting of CTCTCAGCG, CTCTCAGC, CTCTCAG, CTCTCA, CTCTC, CTCT, CTC, CT and C (SEQ ID NOS: 11, 12, 99, 102, 293-333).~~

Claim 10 (withdrawn): The recombinant adenovirus vector of claim 8 wherein said porcine adenovirus sequence essential for encapsidation comprises a nucleotide sequence selected from the group consisting of:

Motif 1 represented by X_1TATTTTY$_1$, wherein X_1 is selected from the group consisting of G, GG, TGG, and CTGG, and wherein Y_1 is selected from the group consisting of C, CC, CCA, and CCAC (SEQ ID NOS: 13, 334-348);

Motif 2 represented by X_2ATATTY$_2$, wherein X_2 is selected from the group consisting of G, TG, and GTG, and wherein Y_2 is selected from the group consisting of G and GG (SEQ ID NOS: 14, 349-353);

Motif 3 represented by X_3TTTAY$_3$, wherein X_3 is selected from the group consisting of C and CC, and wherein Y_3 is selected from the group consisting of C, CC, CCT, CCTG, CCTGG, and CCTGGG (SEQ ID NOS: 15, 354-364);

Motif 4 represented by X_4AATTTTAY$_4$, wherein X_4 is selected from the group consisting of C, TC, and CTC, and wherein Y_4 is selected from the group consisting of C, CC, CCA, and CCAC (SEQ ID NOS: 16, 365-375);

Motif 5 represented by $X_5ATTTTTY_5$, wherein X_5 is selected from the group consisting of G, CG, TCG, GTCG, and GGTCG, and wherein Y_5 is selected from the group consisting of C, CC, CCA, and CCAC (SEQ ID NOS: 17, 376-394); and

Motif 6 represented by $X_6TATTTATTY_6$, wherein X_6 is selected from the group consisting of C, CC, and CCC, and wherein Y_6 is selected from the group consisting of C, CT, CTG, CTGC, CTGCG, CTGCGC, and CTGCGCG (SEQ ID NOS: 18, 20, 395-413).

Claim 11 (currently amended): A replication-defective recombinant adenovirus vector which comprises ~~an isolated~~ a porcine adenovirus sequence[[(s)]] essential for encapsidation, wherein said sequence essential for encapsidation consists of [[a]] the nucleotide sequence between nt 212 and 531 (SEQ ID NO:414) of porcine adenovirus type 3, ~~and~~ wherein said nucleotide sequence comprises the sequence ~~one or more sequences selected from the group consisting of AAATT; ATTTT; TATT;~~ TATTTTTT~~; TATATA; TTTT; TATTTT; ATATT; TTTA; AATTTTA; ATTTTT; and TATTTATT~~ and wherein the nucleotide sequence is capable of encapsidating an adenovirus genome.

Claim 12 (currently amended): The recombinant adenovirus vector of claim 11, wherein said porcine adenovirus sequence[[(s)]] essential for encapsidation is heterologous to said adenovirus vector.

Claim 13 (original): The recombinant adenovirus vector of claim 12 wherein said adenovirus vector comprises human adenoviral sequences.

Claim 14 (original): The recombinant adenovirus vector of claim 12 wherein said adenovirus vector comprises bovine adenoviral sequences.

Claim 15 (currently amended): The recombinant adenovirus vector of claim 11 wherein said sequence essential for encapsidation comprises a nucleotide sequence ~~selected from the group consisting of:~~

~~Motif I represented by X_IAAATTY$_I$, wherein X_I is selected from the group consisting of G, GG, CGG, GCGG, and GGCGG, and wherein Y_I is selected from the group consisting of CCCGCACA, CCCGCAC, CCCGCA, CCCGC, CCCG, CCC, CC and C (SEQ ID NOS: 1, 2, 91, 103-139);~~

~~Motif II represented by X_{II}ATTTTY$_{II}$, wherein X_{II} is selected from the group consisting of G, GG, GGG, CGGG, and GCGGG, and wherein Y_{II} is selected from the group consisting of GTGCCCTCT, GTGCCCTC, GTGCCCT, GTGCCC, GTGCC, GTGC, GTG, GT and G (SEQ ID NOS: 3, 4, 95, 140-181);~~

~~Motif III represented by X_{III}TATTY$_{III}$, wherein X_{III} is selected from the group consisting of G, GG, CGG, CCGG, and CCCGG, and wherein Y_{III} is selected from the group consisting of CCCCACCTG, CCCCACCT, CCCCACC, CCCCAC, CCCCA, CCCC, CCC, CC, and C (SEQ ID NOS: 5, 6, 97, 182-223);~~

Motif IV represented by X_{IV}TATTTTTTY$_{IV}$, wherein X_{IV} is selected from the group consisting of G, TG, GTG, GGTG, and GGGTG, and wherein Y_{IV} is selected from the group consisting of CCCCTCA, CCCCTC, CCCCT, CCCC, CCC, CC, and C (SEQ ID NOS: 7, 8, 100, 224-255);

~~Motif V represented by X_VTATATAY$_V$, wherein X_V is selected from the group consisting of G, TG, GTG, AGTG, and CAGTG, and wherein Y_V is selected from the group consisting of GTCCGCGC, GTCCGCG, GTCCGC, GTCCG, GTCC, GTC, GT and G (SEQ ID NOS: 9, 10, 101, 256-292); and~~

~~Motif VI represented by X_{VI}TTTTY$_{VI}$, wherein X_{VI} is selected from the group consisting of G, AG, GAG, AGAG, and TAGAG, wherein Y_{VI} is selected from the group consisting of CTCTCAGCG, CTCTCAGC, CTCTCAG, CTCTCA, CTCTC, CTCT, CTC, CT and C (SEQ ID NOS: 11, 12, 99, 102, 293-333).~~

Claim 16 (withdrawn): The recombinant adenovirus vector of claim 11 wherein said porcine adenovirus sequence essential for encapsidation comprises a nucleotide sequence selected from the group consisting of:

Motif 1 represented by $X_1TATTTTY_1$, wherein X_1 is selected from the group consisting of G, GG, TGG, and CTGG, and wherein Y_1 is selected from the group consisting of C, CC, CCA, and CCAC (SEQ ID NOS: 13, 334-348);

Motif 2 represented by $X_2ATATTY_2$, wherein X_2 is selected from the group consisting of G, TG, and GTG, and wherein Y_2 is selected from the group consisting of G and GG (SEQ ID NOS: 14, 349-353);

Motif 3 represented by X_3TTTAY_3, wherein X_3 is selected from the group consisting of C and CC, and wherein Y_3 is selected from the group consisting of C, CC, CCT, CCTG, CCTGG, and CCTGGG (SEQ ID NOS: 15, 354-364);

Motif 4 represented by $X_4AATTTTAY_4$, wherein X_4 is selected from the group consisting of C, TC, and CTC, and wherein Y_4 is selected from the group consisting of C, CC, CCA, and CCAC (SEQ ID NOS: 16, 365-375);

Motif 5 represented by $X_5ATTTTTY_5$, wherein X_5 is selected from the group consisting of G, CG, TCG, GTCG, and GGTCG, and wherein Y_5 is selected from the group consisting of C, CC, CCA, and CCAC (SEQ ID NOS: 17, 376-394); and

Motif 6 represented by $X_6TATTTATTY_6$, wherein X_6 is selected from the group consisting of C, CC, and CCC, and wherein Y_6 is selected from the group consisting of C, CT, CTG, CTGC, CTGCG, CTGCGC, and CTGCGCG (SEQ ID NOS: 18, 20, 395-413).

Claim 17 (original): The recombinant adenovirus vector of claim 11 which further comprises at least one nucleic acid sequence encoding a transgene.

Claim 18 (currently amended): ~~The recombinant vector of claim 11 which further~~ A replication-defective recombinant adenovirus vector which comprises a porcine adenovirus sequence essential for encapsidation;

wherein said sequence essential for encapsidation consists of the nucleotide sequence between nt 212 and 531 (SEQ ID NO:414) of porcine adenovirus type 3;

wherein said nucleotide sequence essential for encapsidation comprises the sequence TATTTTTT;

wherein the nucleotide sequence essential for encapsidation is capable of encapsidating an adenovirus genome; and

wherein the replication-defective recombinant adenovirus vector comprises at least one inverted terminal repeat sequence from a human adenovirus.

Claim 19 (currently amended): ~~The recombinant vector of claim 11 which further~~ A replication-defective recombinant adenovirus vector which comprises a porcine adenovirus sequence essential for encapsidation;

wherein said sequence essential for encapsidation consists of the nucleotide sequence between nt 212 and 531 (SEQ ID NO:414) of porcine adenovirus type 3;

wherein said nucleotide sequence essential for encapsidation comprises the sequence TATTTTTT;

wherein the nucleotide sequence essential for encapsidation is capable of encapsidating an adenovirus genome; and

wherein the replication-defective recombinant adenovirus comprises at least one inverted terminal repeat sequence from a bovine adenovirus.

Claim 20 (currently amended): The recombinant adenovirus vector of claim 11 wherein said adenovirus vector comprises ~~at least one isolated~~ a porcine adenovirus sequence[[(s)]] essential for encapsidation, at least one inverted terminal repeat sequence and nucleic acid encoding a transgene, wherein said adenovirus vector is deleted in a nucleic acid sequence encoding an adenovirus protein.

Claim 21 (currently amended): The recombinant adenovirus vector of claim 12, wherein said adenovirus vector comprises a human adenovirus sequence~~, a porcine adenovirus sequence,~~ or bovine adenovirus sequences.

Claim 22 (original): The recombinant adenovirus vector of claim 20 wherein said transgene encodes an immunogenic polypeptide.

Claim 23 (original): The recombinant adenovirus vector of claim 20 wherein said transgene encodes an antigen of a pathogen.

Claim 24 (original): The recombinant adenovirus vector of claim 23 wherein said pathogen is a human pathogen.

Claim 25 (original): The recombinant adenovirus vector of claim 23 wherein said pathogen includes a bovine pathogen, porcine pathogen, canine pathogen, feline pathogen or equine pathogen.

Claim 26 (currently amended): A recombinant porcine adenovirus vector which comprises ~~an isolated~~ a porcine adenovirus sequence[[(s)]] essential for encapsidation[[,]]; wherein said sequence essential for encapsidation consists of [[a]] the nucleotide sequence between nt 212 and 531 (SEQ ID NO:414) of porcine adenovirus type 3; ~~and a deletion of a porcine adenovirus sequence essential for encapsidation~~, wherein said sequence essential for encapsidation comprises [[a]] the nucleotide sequence ~~selected from the group consisting of AAATT; ATTTT; TATT;~~ TATTTTTT~~; TATATA; TTTT; TATTTT; ATATT; TTTA; AATTTTA; ATTTTT; and TATTTATT~~ and wherein said nucleotide sequence essential for encapsidation comprises a deletion of a part of the porcine adenovirus sequence essential for encapsidation.

Claim 27 (canceled)

Claim 28 (withdrawn): The recombinant porcine adenovirus vector of claim 26 wherein said porcine adenovirus is PAV5.

Claim 29 (currently amended): An isolated host cell comprising the adenovirus vector of any one of claims 8, 11, 18 or 19.

Claim 30 (currently amended): [[A]] An isolated host cell comprising the adenovirus vector of claim 26.

Claim 31 (original): The host cell of claim 29 which is mammalian.

Claim 32 (original): The host cell of claim 30 which is mammalian.

Claim 33 (currently amended): A recombinant adenovirus particle comprising the adenovirus vector of any one of claims 8, 11, 18 or 19.

Claim 34 (original): A recombinant adenovirus particle comprising the adenovirus vector of claim 26.

Claim 35 (currently amended): A composition comprising the adenoviral vector of any one of claims 8, 11, 18 or 19.

Claim 36 (original): A composition comprising the adenoviral vector of claims 26.

Claim 37 (original): The composition of claim 35 further comprising a pharmaceutically acceptable carrier.

Claim 38 (currently amended): The composition of ~~claim 35 or~~ 36 further comprising a pharmaceutically acceptable carrier.

Claim 39 (currently amended): A composition capable of inducing an immune response in a mammalian subject, said composition comprising an adenovirus vector of any one of claims 8, 11, 18, 19 or ~~claim~~ 26 and a pharmaceutically acceptable excipient.

Claim 40 (withdrawn): A method for eliciting an immune response in a mammalian subject comprising administering a composition of claim 35 and a pharmaceutically acceptable excipient to said mammalian subject.

Claim 41 (withdrawn): A method for eliciting an immune response in a mammalian subject comprising administering a composition of claim 36 and a pharmaceutically acceptable excipient to said mammalian subject.

Claim 42 (withdrawn): A recombinant porcine adenovirus vector comprising a deletion and/or addition of part or all of one or more E1 transcriptional control regions.

Claim 43 (withdrawn): The recombinant porcine adenovirus vector of claim 42 wherein said E1 transcriptional control region comprises from about nucleotide 252 to about nucleotide 313 of PAV-3.

Claim 44 (withdrawn): The recombinant porcine adenovirus vector of claim 42 wherein said E1 transcriptional control region comprises from about nucleotide 382 to about nucleotide 433 of PAV-3.

Claim 45 (withdrawn): The recombinant porcine adenovirus vector of claim 42 wherein said E1 transcriptional control region comprises from about nucleotide 432 to about nucleotide 449 of PAV-3.

Claim 46 (withdrawn): The recombinant porcine adenovirus vector of claim 42 wherein said E1 transcriptional control region comprises from about nucleotide 312 to about nucleotide 382 of PAV-3.

Claim 47 (withdrawn): The recombinant porcine adenovirus vector of claim 42 wherein said E1 transcriptional control region comprises from about nucleotide 312 to about nucleotide 449 of PAV-3.

Claim 48 (withdrawn): The recombinant porcine adenovirus vector of claim 42 wherein said E1 transcriptional control region comprises from about nucleotide 252 to about nucleotide 449 of PAV-3.

Claim 49 (withdrawn): The recombinant porcine adenovirus vector of claim 42 wherein said E1 transcriptional control region comprises from about nucleotide 371 to about nucleotide 432 of PAV-3.

Claim 50 (withdrawn): A host cell comprising a porcine adenovirus vector of claim 42.

Claim 51 (withdrawn): A composition comprising a porcine adenovirus vector of claim 42.

Claim 52 (withdrawn): The composition of claim 51 further comprising a pharmaceutically acceptable carrier.

Claim 53 (withdrawn): A recombinant adenovirus particle comprising the adenovirus vector of claim 42.

Claim 54 (withdrawn): A composition capable of inducing an immune response in a mammalian subject, said composition comprising an adenovirus vector of claim 42 and a pharmaceutically acceptable excipient.

Claim 55 (withdrawn): A method for eliciting an immune response in an mammalian subject comprising administering a composition of claim 42 and a pharmaceutically acceptable excipient to said mammalian subject.

Claims 56 - 57 (canceled)

Claims 58 (withdrawn): A vaccine for protecting a mammalian host against infection comprising the recombinant adenovirus vector of claim 42 and a pharmaceutically acceptable excipient.

Claim 59 (withdrawn): A method for preparing a porcine adenovirus comprising, culturing a recombinant porcine adenovirus vector which is deleted in a porcine adenovirus sequence(s) essential for encapsidation, such that the vector is not capable of being encapsidated, wherein said adenovirus vector is optionally deleted in nucleic acid encoding adenoviral proteins necessary for replication; in the presence of a helper virus that comprises nucleic acid for the porcine adenovirus sequence essential for encapsidation and optionally any adenovirus protein necessary for replication of said adenovirus, under conditions suitable for production of viral particles; and optionally recovering said viral particles.

Claim 60 (withdrawn): A method for preparing an adenovirus comprising culturing an adenovirus vector which comprises a porcine adenovirus sequence(s) essential for encapsidation, wherein said porcine adenovirus sequence(s) essential for encapsidation is heterologous to said adenovirus vector, under conditions suitable for production of viral particles; and optionally recovering said viral particles.

Claim 61 (withdrawn): A method for preparing an adenovirus comprising culturing an adenovirus vector which comprises a deletion and/or addition of part or all of one or more E1 transcriptional control regions comprising culturing the adenovirus vector under conditions suitable for production of viral particles; and optionally recovering said viral particles.

Claim 62 (withdrawn): The method of claim 59 wherein said adenovirus vector further comprises a transgene.

Claim 63 (withdrawn): The method of claim 60 wherein said adenovirus vector further comprises a transgene.

Claim 64 (withdrawn): The method of claim 61 wherein said adenovirus vector further comprises a transgene.

Claim 65 (previously presented): The composition of claim 39 wherein the immune response is a humoral, cell-mediated, or mucosal immune response.

Claim 66 (previously presented): The composition of claim 39 wherein the mammal is a swine, a bovine, canine, or a human.

Claim 67 (previously presented): The composition of claim 39 wherein the adenovirus vector further comprises a nucleotide sequence that encodes a native or recombinant antigenic peptide.

Claim 68 (previously presented): The composition of claim 67 wherein the antigenic peptide is a human pathogen antigen.

Claim 69 (previously presented): The composition of claim 68 wherein the human pathogen antigen is an HIV virus antigen or a hepatitis virus antigen.

Claim 70 (previously presented): The composition of claim 67 wherein the antigenic peptide is a swine pathogen antigen.

Claim 71 (previously presented): The composition of claim 70 wherein the swine pathogen antigen selected from the group consisting of pseudorabies virus (PRV) gp50; transmissible gastroenteritis virus (TGEV) S gene; porcine rotavirus VP7 and VP8 genes; genes of porcine respiratory and reproductive syndrome virus (PRRS), in particular ORFs 3, 4 and 5; genes of porcine epidemic diarrhea virus; genes of hog cholera virus; genes of porcine parvovirus; and genes of porcine influenza virus.

Claim 72 (previously presented): The composition of claim 67 wherein the antigenic peptide is a bovine pathogen antigen.

Claim 73 (previously presented): The composition of claim 72 wherein the bovine pathogen antigen is selected from the group consisting of bovine herpes virus type 1; bovine diarrhea virus; and bovine coronavirus.

Claim 74 (new): The recombinant adenovirus vector of claim 8 further comprising an inverted terminal repeat sequence from porcine adenovirus.

Claim 75 (new): The recombinant adenovirus vector of claim 8 further comprising two inverted terminal repeat sequences from porcine adenovirus.

Claim 76 (new): The recombinant adenovirus vector of claim 11 further comprising an inverted terminal repeat sequence from porcine adenovirus.

Claim 77 (new): The recombinant adenovirus vector of claim 11 further comprising two inverted terminal repeat sequences from porcine adenovirus.

Claim 78 (new): The recombinant adenovirus vector of claim 18 further comprising two inverted terminal repeat sequences from human adenovirus.

Claim 79 (new): The recombinant adenovirus vector of claim 19 further comprising two inverted terminal repeat sequences from bovine adenovirus.